abcam

ab109250

Anti-Nanog antibody [EPR2027(2)]

Anti-Nanog antibody [EPR2027(2)] (ab109250) is a rabbit monoclonal antibody detecting Nanog in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF, ChIP-seq**. Suitable for **Human**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 190 publications

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR2027(2)
Purification technique	Affinity purification Protein A
Specificity	100% identities with NANOGP8
Concentration	0.523 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg
Notes	-

ChIP-seq

Tested

Species	Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/40
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/70
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	Antigen retrieval is recommended. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information NANOG

Function

Transcription regulator involved in inner cell mass and embryonic stem (ES) cells proliferation and self-renewal. Imposes pluripotency on ES cells and prevents their differentiation towards extraembryonic endoderm and trophectoderm lineages. Blocks bone morphogenetic protein-induced mesoderm differentiation of ES cells by physically interacting with SMAD1 and interfering with the recruitment of coactivators to the active SMAD transcriptional complexes. Acts as a transcriptional activator or repressor. Binds optimally to the DNA consensus sequence 5'-TAAT[GT][GT]-3' or 5'-[CG][GA][CG]C[GC]ATTAN[GC]-3'. Binds to the POU5F1/OCT4 promoter (PubMed:25825768). Able to autorepress its expression in differentiating (ES) cells: binds to its own promoter following interaction with ZNF281/ZFP281, leading to recruitment of the NuRD complex and subsequent repression of expression. When overexpressed, promotes cells to enter into S phase and proliferation.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Nanog antibody [EPR2027(2)] (ab109250) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), ChIP in Human samples.

What is the molecular weight of Nanog?
Anti-Nanog [EPR2027(2)] (ab109250) specifically detects a band for Nanog (UniProt: Q9H9S0) at a molecular weight of 35kDa.

Trusted by the scientific community
Anti-Nanog [EPR2027(2)] (ab109250) was first used in a scientific publication in 2011 and has been cited over 190 times in peer-reviewed journals.

Reviewed by scientists
Anti-Nanog [EPR2027(2)] (ab109250) has over 10 independent reviews from customers.

Other related products
We have a range of other formats of antibody clone [EPR2027(2)] also available for your convenience: ab109250, Alexa Fluor® 647 - ab195018, Alexa Fluor® 488 - ab196155, Carrier free - ab218524

Species reactivity
Mouse: We have preliminary internal testing data to indicate this antibody may not react with this species. Please contact us for more information.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Nanog also known as Nanog homeobox is a transcription factor playing an important role in maintaining the pluripotency of embryonic stem cells. The molecular weight of Nanog is approximately 35 kDa. It is found mainly in the inner cell mass of the blastocyst but it also expresses in embryonic stem cells and some adult stem cell populations. Nanog acts by binding to DNA in a sequence-specific manner to regulate gene expression essential for stem cell self-renewal and pluripotency.
Biological function summary	Nanog plays a central role in stem cell biology operating as part of a complex regulatory network. Nanog interacts with other important transcription factors like Oct4 and Sox2 forming a core pluripotency network. This network suppresses the differentiation of stem cells by regulating the expression of genes involved in cell fate decisions. By modulating the expression of different pathways Nanog ensures the maintenance of an undifferentiated state in stem cells.
Pathways	Nanog is deeply embedded in the Wnt/B-Catenin and TGF-B signaling pathways important for stem cell maintenance and differentiation. In the Wnt/B-Catenin pathway Nanog works alongside proteins like B-catenin to drive the expression of genes that promote self-renewal. Meanwhile in the TGF-B pathway Nanog acts with proteins such as Smad2/3 to balance pluripotency and differentiation signals. These pathways critically support the complex network that sustains stem cell identity and function.
Associated diseases and disorders	Nanog's expression relates closely to its role in various cancers such as glioblastoma and colorectal cancer. Abnormally high levels of Nanog contribute to the tumorigenicity of cancer cells by maintaining their self-renewal and undifferentiated state similar to its role in stem cells. Nanog interacts with proteins like p53 known for its tumor suppressor functions often leading to challenges in cancer treatment. Understanding Nanog's influence in these pathways provides valuable insights into therapeutic targets for combating cancer stem cell resilience.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

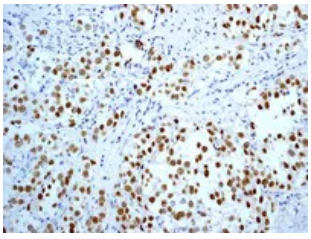
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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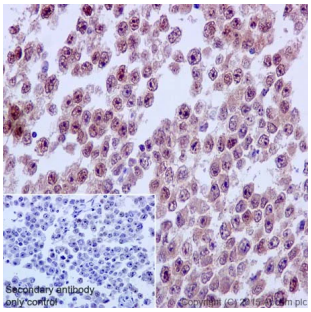
17 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Nanog antibody

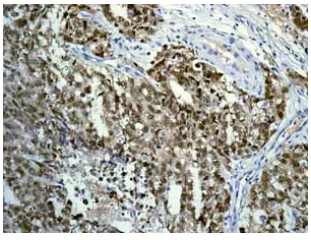
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human seminoma tissue labelling Nanog with unpurified ab109250 at 1/100.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Nanog antibody

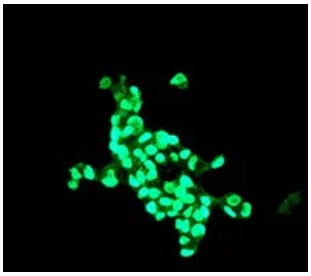
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human seminoma tissue labelling Nanog with purified ab109250 at 1/100. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a goat anti-rabbit IgG H&L (HRP) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Nanog antibody

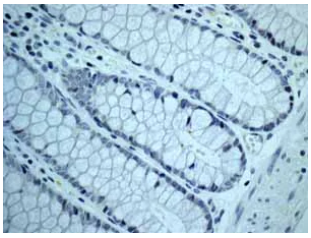
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human embryonal carcinoma tissue labelling Nanog with unpurified ab109250 at 1/100.



Immunocytochemistry/ Immunofluorescence - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Nanog antibody

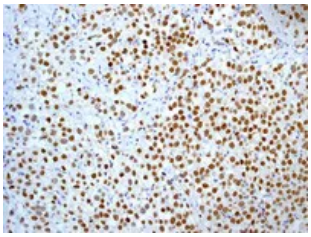
Immunocytochemistry/Immunofluorescence analysis of embryonic carcinoma cells labelling Nanog with unpurified ab109250 at 1/100.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Nanog antibody

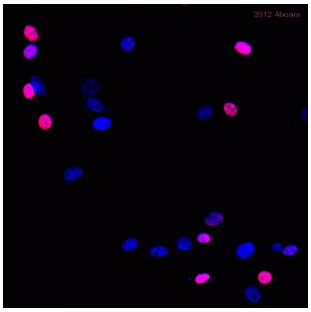
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human normal colon tissue shows negative staining of Nanog with unpurified ab109250.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Nanog antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human dysgerminoma tissue labelling Nanog with unpurified ab109250 at 1/100.

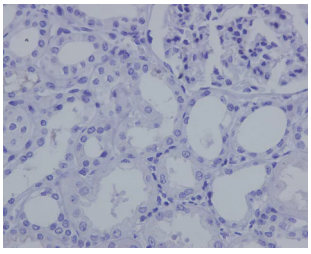


This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Nanog antibody

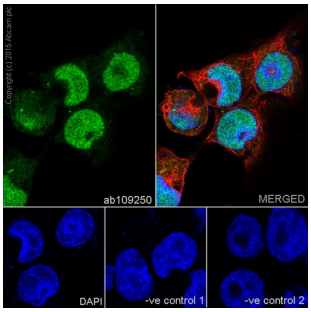
Immunocytochemistry/Immunofluorescence analysis of Human Liver cells labelling Nanog with unpurified ab109250. Cells were fixed with Paraformaldehyde, permeabilized with Triton X-100 0.1% and blocked with 1% BSA for 12 hours at 4°C. Sample was incubated with primary antibody (1/500 in PBS) for 16 hour at 4°C. An Alexa Fluor®647-conjugated Donkey anti-rabbit(1/1000) IgG polyclonal was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Nanog antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human adult kidney tissue shows negative staining of Nanog with unpurified ab109250.

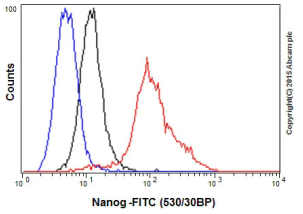


Immunocytochemistry/ Immunofluorescence - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Nanog antibody

Immunocytochemistry/Immunofluorescence analysis of NCCIT(human pluripotent embryonal carcinoma) cells labelling Nanog with purified ab109250 at 1/250. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.
Control 1: primary antibody (1/100) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).

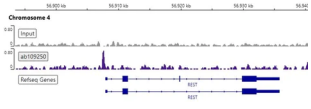
Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).



Flow Cytometry (Intracellular) - Anti-Nanog antibody [EPR2027(2)] (ab109250)

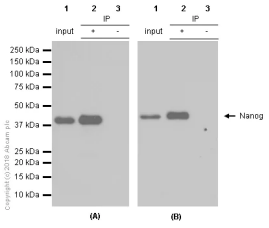
Nanog Flow Cytometry (Intracellular) staining using rabbit Anti-Nanog antibody

Intracellular Flow Cytometry analysis ofNCCIT cells labelling Nanog with purified ab109250 at 1/70 (red). Cells were fixed with 4% paraformaldehyde. A FITC-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.



ChIP-sequencing - Anti-Nanog antibody [EPR2027(2)] (ab109250)

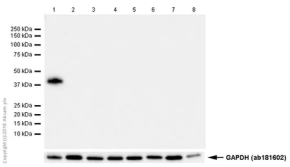
Chromatin was prepared from NCCIT (Human pluripotent embryonic carcinoma cell line) cells. ChIP was performed with 10^7 NCCIT cells and 8 µg of ab109250 [[EPR2027(2)]. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads.



Immunoprecipitation - Anti-Nanog antibody [EPR2027(2)] (ab109250)

ab109250 (purified) at 1/500 dilution (1.5 ©:g/ml) immunoprecipitating Nanog in NCCIT whole cell lysate.
Lane 1 (input): NCCIT(Human pluripotent embryonic carcinoma epithelial cell) whole cell lysate 10©:g
Lane 2 (+): ab109250 & NCCIT whole cell lysate
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab109250 in NCCIT whole cell lysate
For western blotting, VeriBlot for IP secondary antibody (HRP) (ab131366) was used as the secondary antibody at 1/1000 dilution.
Blocking and diluting buffer: 5% NFDM /TBST .
All lanes:
Immunoprecipitation - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Predicted band size: 34 kDa



Western blot - Anti-Nanog antibody [EPR2027(2)] (ab109250)

Nanog Western blot staining using rabbit Anti-Nanog antibody

Nanog is highly expressed in cancer stem cells. Although some papers support the expression in undifferentiated cancer cell lines, such as HeLa (PMID: 22337995, 28092370), MDA-MB-231 (PMID: 28401007, 25919570), HepG2 (PMID: 29477378), Huh7 (PMID: 26919045), HCT 116 (PMID: 25249558, 28092370) and PANC-1 (PMID: 28703793, 25846752), ab109250 can't detect the target band in these cell lines, even at the dilution of 1:200.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Nanog antibody [EPR2027(2)] (ab109250) at 1/2000 dilution

Lane 1:
NCCIT (Human pluripotent embryonic carcinoma epithelial cell) whole cell lysates at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 20 µg

Lane 3:
HEK-293 (Human embryonic kidney epithelial cell) whole cell lysates at 20 µg

Lane 4:
MDA-MB-231 (Human breast adenocarcinoma epithelial cell) whole cell lysates at 20 µg

Lane 5:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysates at 20 µg

Lane 6:
Huh7 (Human hepatocellular carcinoma epithelial cell) whole cell lysates at 20 µg

Lane 7:
HCT 116 (Human colorectal carcinoma epithelial cell) whole cell lysates at 20 µg

Lane 8:
PANC-1 (Human pancreatic epithelioid carcinoma epithelial cell) whole cell lysates at 20 µg

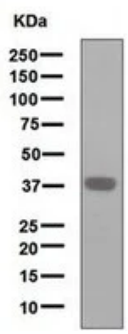
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 34 kDa

Observed band size: 37 kDa

Exposure time: 30s



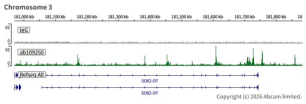
Western blot - Anti-Nanog antibody [EPR2027(2)] (ab109250)

All lanes:
Western blot - Anti-Nanog antibody [EPR2027(2)] (ab109250) at 1/1000 dilution

All lanes:
NCCIT cell lysate at 10 µg

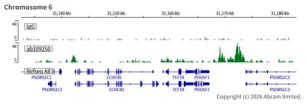
Predicted band size: 34 kDa

Observed band size: 37 kDa



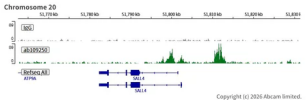
ChIC/CUT&RUN sequencing - Anti-Nanog antibody [EPR2027(2)] (ab109250)

ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 NCCIT (human pluripotent embryonic carcinoma epithelial cell) cells and 5 µg of ab109250 [EPR2027(2)]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.